

CLAIMS:

1. Light generating device comprising

- a slab light guide (1) having two substantially parallel sides (10, 11) and at least one edge (12), the edge (12) having a surface connecting the surfaces of said sides (10, 11),

- at least one light input unit (2) arranged on at least one side (10) of said light guide (1)

5 comprising at least one light source (20) and a light incoupling means (21) for coupling light into said light guide (1), and

- at least one light output unit (3) arranged on at least one side (11) of said light guide (1) comprising a polarized light emitting waveguide plate (31) for selectively coupling light of a first polarization state out of said light guide (1).

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2. Light generating device as claimed in claim 1,

wherein said waveguide plate comprises an anisotropically light scattering layer (31) for selectively scattering light of said first polarization state out of said light guide (1).

15 3. Light generating device as claimed in claim 1,

wherein said waveguide plate comprises a micro-structured anisotropically light outcoupling layer (37).

4. Light generating device as claimed in claim 3,

20 wherein said micro-structured anisotropically light outcoupling layer is a liquid crystalline polymer or a birefringent polymer, in particular PET or PEN.

5. Light generating device as claimed in claim 1,

wherein said waveguide plate comprises a hologram outcoupling layer.

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6. Light generating device as claimed in claim 5,

wherein the Bragg angle is substantially 45°.

7. Light generating device as claimed in claim 5,
wherein the thickness is chosen such that outcoupling is polarization selective.

8. Light generating device as claimed in claim 1,
5 further comprising a reflective polarizer and outcoupling structure.

9. Light generating device as claimed in claim 8,
wherein said reflective polarizer is a broad band cholesteric network, a multilayer film or a
wire grid polarizer.

10. Light generating device as claimed in claim 1,
wherein said light incoupling means (21) comprises a plurality of incoupling optical elements
(22-24) being in optical contact with the surface of said at least one side (10) of said light
guide (1), said incoupling optical elements (22-24) having a reflective surface section (24)
15 facing the light source (20) and being aligned substantially parallel to the surface of a side
(10) of said light guide (1) and at least one transparent surface section (23) being arranged at
an angle different from 0°, in particular at an angle of substantially 90°, with respect to the
surface of a side (10) of said light guide (1).

20 11. Light generating device as claimed in claim 10,
wherein said incoupling optical elements (22-24) are arranged at intervals and wherein
between said incoupling optical elements (22-24) light reflecting means (25) are arranged, in
particular a structured reflective foil or structured reflective mask that is substantially not in
optical contact with said light guide (1) and is reflective on the side facing the light source
25 (20).

12. Light generating device as claimed in claim 10 or 11,
wherein said incoupling optical elements (22-24) and /or said light reflecting means (25)
have a light absorbing surface section (26) facing the light guide (1).

30 13. Light generating device as claimed in claim 10,
wherein said incoupling optical elements (22-24) are arranged at intervals and wherein
between said incoupling optical elements (22-24) light reflecting means (25) are arranged, in

particular a reflective layer in optical contact with said light guide (1) that is specularly reflective on the side facing the said light guide (1).

14. Light generating device as claimed in claim 10,
5 wherein a reflective surface section (24) of the said incoupling optical elements is diffusely reflective having a reflectivity of substantially 100% at the side of said reflective surface section (24) facing away from the light guide (1)
15. Light generating device as claimed in claim 1,
10 wherein said light guide (1) is provided with light reflection means (13), in particular a specular or diffuse reflector, at its edge (12).
16. Display device, in particular liquid crystal display device of the direct back-lighting type, comprising a display screen, in particular a LC display screen, and a light
15 generating device as claimed in claim 1.
17. Liquid crystal television set comprising a display device as claimed in claim
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